AC 145-3

DATE 2/13/81

Consolidated Reprint -- Includes Change 1

ADVISORY CIRCULAR

GUIDE FOR DEVELOPING AND EVALUATING REPAIR STATION

INSPECTION PROCEDURES MANUALS



DEPARTMENT OF TRANSPORTATION Federal Aviation Administration Washington, D.C.

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ADVISORY CIRCULAR



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Federal Aviation Administration
Washington, D.C.

Subject: GUIDE FOR DEVELOPING AND EVALUATING REPAIR STATION INSPECTION PROCEDURES MANUALS

- 1. PURPOSE. This advisory circular (AC) provides information for developing and evaluating a repair station inspection procedures manual. This information sets forth an acceptable means, but not the only means, of complying with referenced regulations.
- 2. RELATED FEDERAL AVIATION REGULATIONS (FAR). FAR Parts 43, 91, 121, 125, 127, 135 and 145.
- 3. BACKGROUND. The development of a repair station inspection procedures manual that adequately covers all pertinent FAR and the repair stations inspection system has proven to be a time-consuming task for the operator and the Federal Aviation Administration. This guide was developed to reduce that time and to provide a standardized format that may be used to develop a manual that contains a repair station's inspection procedures.
- 4. DISCUSSION. This document is intended for use as a guide for the development and evaluation of the repair station's inspection procedures manual required by FAR Section 145.11(a)(2) and Section 145.45(f).
- a. This guide is not intended to provide a complete sample inspection procedures manual for all repair stations. "Examples" in Appendix 1 are intended to illustrate a requirement related to the FAR. Each inspection procedures manual should be developed within the ratings authorized and the size and complexity of the station. It is important to note that the inspection procedures in the manual are necessary for a satisfactory quality control system, and those procedures should be designed for use by the repair station to satisfactorily perform under its rating(s). In that regard, a repair station with a Limited Specialized Service Rating for Nondestructive Testing would have a different inspection system criteria than a repair station with a Class 3 Airframe Rating. Material is included in portions of this document which may not directly relate to or be required by a referenced

Initiated by: AWS-340

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FAR. However, that material is considered to be valuable as a part of a system for repair station management and illustrates integration of the required inspection procedures and other FAR Part 145 requirements into such a system.

- b. A complete inspection procedures manual should at least:
 - (1) Satisfy the minimum requirements of the FAR.
- (2) Accurately describe the repair station operations as related to its ratings.
- c. The repair station manual content requirements are outlined in FAR Section 145.45(f) and Section 145.51(d)(3). The following is a brief outline of those manual requirements:
 - (1) Detailed explanation of the repair station's inspection system.
 - (2) Details for the continuity of inspection responsibility.
 - (3) Detailed system of inspecting incoming material.
 - (4) Detailed system of preliminary inspection.
 - (5) Detailed system for hidden damage inspection.
- (6) Reference to manufacturer% inspection standards for a particular article when applicable or necessary.
- (7) Sample of inspection forms and the method of their execution or reference to a document in the forms manual.
 - (8) Methods and procedures for training inspection personnel.
- (9) Approved procedures governing work performed outside the repair station.
 - (10) Procedures for acceptance of work performed by other facilities.
- (11) If applicable, procedures for work performed for air carriers (FAR Section 145.2).
- d. An air carrier with an FAA approved repair station rating(s) may make its repair station's inspection procedures manual a part of its air carrier manual provided all of the manual requirements of FAR Part 145 are satisfied.

seph A. Pontecorvo

ting Director of Airworthiness

2/13/81 AC 145-3 Appendix 1

APPENDIX 1. GUIDE FOR DEVELOPING AND EVALUATING REPAIR STATION INSPECTION PROCEDURES MANUALS

FIGURE 1. MANUAL COVER PAGE Reference: FAR Section 145.11(a)(2). This page should identify the manual as an "Inspection Procedures Manual."

INSPECTION PROCEDURES MANUAL
FOR
FAA APPROVED REPAIR STATION NO (Insert repair station #)
d/b/a
(NAME OF COMPANY)
(ADDRESS) (STREET, CITY, STATE AND ZIP CODE)
MANUAL: CONTROL NO
ASSIGNMENT:

FIGURE 2. TABLE OF CONTENTS

(NAME OF COMPANY) REPAIR STATION - INSPECTION PROCEDURES MANUAL TABLE OF **CONTENTS-PAGE** 1 OF 3 Page No. INTRODUCTION i MANUAL CONTROL ii RECORD OF REVISION iii LIST OF EFFECTIVE PAGES iv SECTION I HOUSING & FACILITIES Housing and Facilities 1 2 Facility Floor Plan SECTION II COMPANY ORGANIZATION Organization Chart Authority and Roster of Authorized Inspection Personnel SECTION III PERSONNEL & TRAINING Training Employment Summary SECTION IV DUTIES & RESPONSIBILITIES General **Manager** Chief Inspector Maintenance Manager Avionics Manager Stockroom Manager SECTION V INSPECTION SYSTEM General hspection Personnel APPROVED: Q. M. Boss General Manager

FIGURE 2. TABLE OF CONTENTS (CONTINUED)

(NAME OF COMPANY) REPAIR STATION - INSPECTION PROCEDURE MANUAL

TABLE OF CONTENTS - PAGE 2 OF 3

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General Test . Requirements	4-5
Work Order	Ö
Record of Work	7 8
PreliminaryInspection Inspection for Hidden Person	9
Inspection for Hidden Damage Progressive Inspection	10
Major Repair And Alteration, Aircraft	10
And Components	10
Repair, Alteration and Overhaul Accessories and	10
Appliances	10
Inspection Procedure8	ii
Maintenance Inspection	12
Continuity of Maintenance Responsibility	12
Handling of Parts	13
Tagging and Identification of Parts	13-14
Part Finishing	14
Preservation of Parts	14
Shelf Life	14
IncomingMaterial	15
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Record of Specialized Inspection	1.0
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Record of Inspections Record of Most and Calibration of Dragician Physicson	16 16
Record of Test and Calibration of Precision Equipment York by Outside Contractor8	16
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APPROVED: J. M. Boss General Manager

FIGURE 2. TABLE OF CONTENTS (CONTINUED)

REPAIR STATION - INSPECTION PROCEDURE MANUAL

TABLE OF CONTENTS PAGE 3 OF 3

SECTION V INSPECTION **SYSTEM** (CONTINUED)

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Responsibility for Submitting Reports	22
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Performance of Maintenance, Preventive Maintenance,	
Alterations and Required Inspection Under the	
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FAR Parts 121, 125, 127, and 135	24
Required Inspection Items (RII) Performance of Work at a Location Other	24
Performance of Work at a Location Other	
Than The Repair Station	2 5
	-
SECTION VI FORMS	
List as Required for Repair Station Operation	

APPROVED: 9. W. Boson

FIGURE 3. INTRODUCTION PAGE

Reference: FAR Section 145.11(a)(2) and Section 145.45(f). This page should reflect the company's philosophy and an explanation of the manual.

(NAME OF COMPANY) REPAIR STATION - INSPECTION PROCEDURES MANUAL

Title: Introduction Page No: i Issue Date: 7/1/78

This inspection procedures manual has been prepared in accordance with the current Federal Aviation Regulations (FAR) and the policies of (insert name of company).

This manual explains the internal inspection system in detail, including the continuity of inspection responsibility. It gives samples of inspection forms used and their method of execution. The manual gives a detailed explanation of the following portions of the inspection system: incoming materials, preliminary inspection, hidden damage, inspection continuity and final inspection of the article being maintained or altered at this facility.

The general repair, overhaul or alteration of products will be performed in accordance with the current Federal Aviation Regulations, manufacturer's data, drawings, specifications and bulletins, or other technical data approved by the Administrator for the particular (insert appropriate rating(s) or limited rating(s) airframe, engine, propeller or appliance). Limited rating specialized service for (insert appropriate rating) will be performed in accordance with the procedures outlined in the (insert name of company) Process Specification (insert number) approved by the Federal Aviation Administration (FAA) dated (insert date approved by FAA).

This repair station will not maintain or alter any item for which it is not rated, and will not maintain or alter any article for which it is rated if it requires technical data, equipment, materials, facilities or trained personnel that are not available. (FAR 145.53).

The technical library and this inspection procedures manual, required for operation of this repair station, will be maintained in a current status at all times.

Each supervisor and inspector working for this repair station will have a <u>current</u> copy of this manual and should thoroughly understand its <u>contents</u>. It will also be available to other repair station personnel.

Note: (If applicable) include the following: The performance of any maintenance, preventive maintenance, alteration or required inspections for an air carrier or commercial operator having a continuous airworthiness program under FAR Part 121, 125, 127, or 135 will be performed in accordance with the requirements of FAR Part 145, Section 145.2

APPROVED: J. M. Boco General Manager FIGURE 4. MANUAL CONTROL PAGE

Reference: FAR Section 145.45(f). This page should explain how the manual is to be maintained and kept current.

(NAME OF COMPANY) REPAIR STATION - INSPECTION PROCEDURES MANUAL

Title: Menual Control
Page No: ii
Issue Date 7/1/78

Each menual will have a control number and an assignment entry on the manual cover page. A master list containing the manual number, location and revision status will be kept in the general manager's office.

The general manager will obtain from the chief inspector and each shop supervisor once each month a manual status report. This report will either confirm that the manual is still current and valid for that department's use, or will identify needed changes.

A follow-up file will be maintained in the general manager's office showing, on a continuous basis, the disposition of each needed change which is identified.

The general manager will have those revisions he finds necessary produced in a final form for coordination with the FAA General Aviation District Office at (insert location). Each page of the manual and revision thereto will be approved by the general manager. Upon acceptance by FAA, sufficient copies will be made and distributed to provide revision pages for each manual holder.

Upon receipt of a revision, each manual holder will be responsible for inserting the revised pages in its manual, record the revision on the manual's record of revision page and return the acknowledgment form (provided with the revision) to the general manager showing the holder has revised its manual.

A list of effective pages will be issued with each revision so each manual can be checked and kept current.

APPROVED: J. M. Boso General Manager FIGURE 5. RECORD OF REVISION PAGE

Reference: FAR Section 145.45(f). This page should contain a record of all revisions.

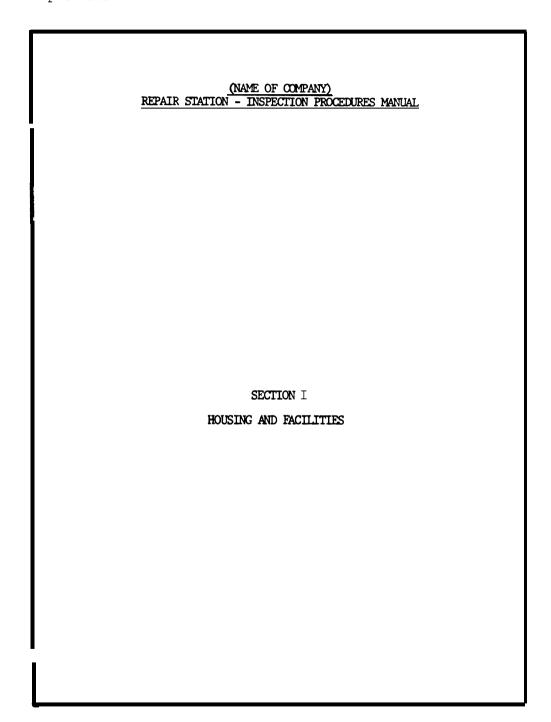
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appropri	ate block	on the reco	rd of re onnel an s appar	evisions. re expecte ent, to t	Return	revision, in acknowledgmen est revision manager. Insertion	the t for
No. Original	Date 7/1/78	Date 7/1/78	By HDO	Rev. No.	Date	Date	В
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FIGURE 6.LIST OF EFFECTIVE PAGES
Reference: FAR Section 145.45(f). 'This page should list each page in the manual and show the current effective date of that page. A new list of effective pages would be required with each revision in order to provide a means for the manual holder to check that its manual is current.

(NAME OF COMPANY) REPAIR STATION - INSPECTION PROCEDURES MANUAL									
Title: List of Effective Pages Page No: iv Issue Date: 7/1/78 Revision No:									
Section	Page No.	Date	Section	Page No.	Date	Section,	Page No.	Date	
Table of Contents	1 Thru 3	7/1/78							
Introduc- tion	i	7/1/78							
Manual Control	ii	7/1/78							
Record of Revisions	iii	7/1/78							
List of Effective Pages	iv	7/1/78							
I	1 Thru 2	7/1/78							
II	1 Thru 3	7/1/78							
III	1 Thru 2	7/1/78							
IV	l Thru 9	7/1/78							
v	1 Thru 25	7/1/78							
VI	List a	s necessa	ry for re	pair statio	on oper	ation			
APPROVED:	APPROVED: J. M. Bour General Manager								

FIGURE 7. SECTION I - HOUSING AND FACILITIES COVER PAGE

NOTE: This information is not required by FAR to be included in the manual. If inclusion is desirable examples are provided.



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FIGURE 8. HOUSING AND FACILITIES DESCRIPTION PAGE.

Reference: FAR Section 145.35(a) through (h) and FAR Section 145.37(a) through (f) This page should contain a description of the buildings, facilities and type of construction. Include type of floors, buildings, facilities and type of construction and compressed air outlets. Other special requirements applicable to spray painting, airframe or engine ratings, instrument, radio and propeller ratings, should be Total area (in square feet) should be given. covered on this page.

NOTE: (Ref. FAR Section 145.21). Any changes to the location or in its housing and facility must be approved in writing by the local Flight Standards District Office.

(NAME OF COMPANY) REPAIR STATION - INSPECTION PROCEDURES MANUAL

Section: I Page No: 1

Title: Housing and Facilities Issue Date: 7/1/78

The (insert name of company) FAA Certificated Repair Station No. (insert) is completely housed in an all steel semicantilever two bay hangar with attached offices, stockroom, and shops with the following:

69,000 Square feet of hangar floor space 1,183 Square feet of office space 2,662 Square feet of stockroom floor space

2,581 Square feet of shop space

All floors are constructed of reinforced concrete with asphalt tile overlay in the offices and shops.

All office and shop spaces are lighted with fluorescent light fixtures. All hangar bays are lighted with approximately 50 explosion proof 750 watt lamp assemblies. 220 Volt-30 amp and 110 Volt-20 amp circuits are available in hangar and shop areas.

Hangar has four doors, each 50' wide, two to each of the hangar's two bays. The doors, when open have all overhead clearance of 38'6" and leave a 100' opening the full length of each hangar bay. Doors cm be operated manually or electrically.

Traveling hoists are located on the beams of the hangar, servicing the entire floor space. The entire hangar, offices, stockroom and shops are protected with a fire alarm and sprinkler system. The ramp in front of the hangar is concrete and is lighted by floodlights at night.

A 90 PSI/60 CFM electric driven air compressor supplies filtered compressed air to wall outlets equipped with moisture traps at convenient locations in hangar and shop areas.

Hangar is heated by a central boiler room blowing hot air through ducts and overhead blowers. The offices, stockroom, and shops are heated through hot air ducts.

APPROVED J. m. 6

FICURE 9. FACILITY FLOOR PLAN
Reference: FAR Section 145.37. This page would contain a floor plan
of shops, hangar, stock area, offices, etc. External dimensions of the
individual areas should be given.

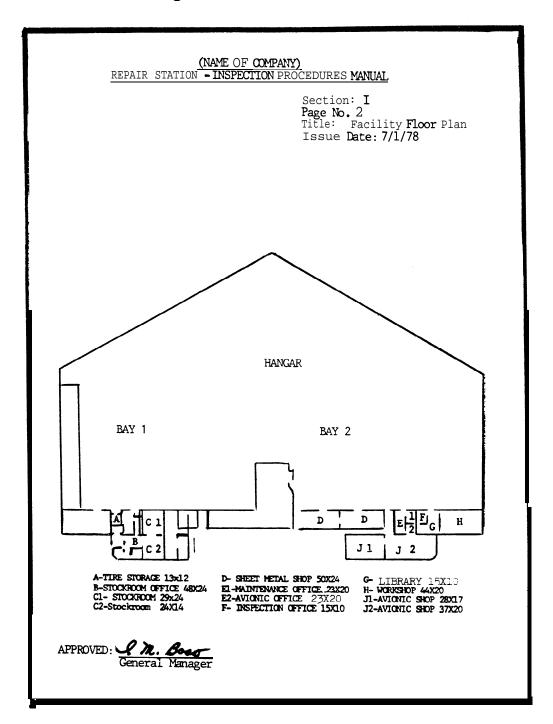


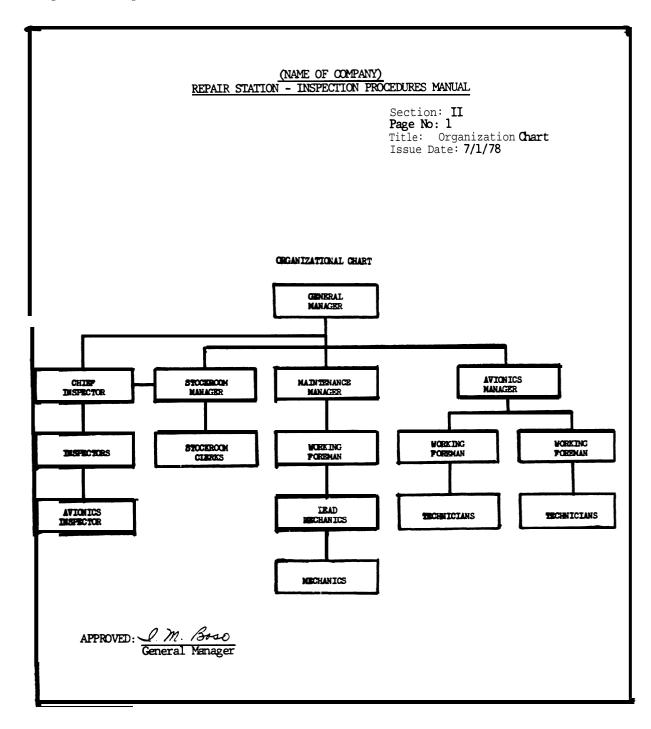
FIGURE 10. SECTION II - COMPANY ORGANIZATION COVER PAGE

NOTE: Only information relating to the inspection responsibility continuity is required to be included in the manual.

(NAME OF COMPANY)
REPAIR STATION - INSPECTION PROCEDURES MANUAL SECTION II COMPANY ORGANIZATION

FIGURE 11. ORGANIZATIONAL CHART

Reference: FAR Section 145.43(a) through (e). This page should contain
the company organization flow chart indicating authority by title only.
It should reflect separation between supervision of the maintenance and
inspection departments.



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Reference: FAR Section 145.43(a)(2). This information is not required by regulation to be kept in this manual but is required to be available in the repair station. It is recommended that this information be kept in the repair station only, so a revision to the list would not rewire a revision of the manual. If a repair station finds it advantageous, the information may be included in this part of the manual. In either case, it should include the name of the chief inspector, all inspection personnel and identify those inspectors who make final quality determination before approval for return to service. It should include all authorized signatures for "Return to Service" and indicate the area of responsibility of each person.

- NOTE 1: A space should be provided opposite each name for their signature. If work is performed in accordance with FAR Section 145.2, required inspection personnel should be designated as required by Subpart L of FAR Part 121, Subpart C of FAR Part 125, Subpart I of FAR Part 127 and Subpart J of FAR. Part 135.

 Training records are required to be maintained on each individual to show compliance with FAR Section 145.39(e).
- NOTE 2: No person may perform a required inspection on work covered by Section 145.2 if that person performed the item of work to be inspected.

REI	(NAME OF C PAIR STATION - INSPEC		S MANUAL	
	Page Title	ion: II No: 2 e: Authority a Authorized Personnel e Date: 7/1/78	Inspection	£
	Certificate Type	Inspector's	Identificati	on.
Name and Title	and Number	Signature	Initial	Stamp
(**) Harry Jones Chief, Inspector	AEP 15602 Repairman O 36891 Instruments Propellers			
(##) Joseph Camp Inspector Line &	•			
Receiving	A&P 21625			
(**) Michael Jabe				
Inspector Hangar and Receiving	3cp p1202			
(*) Anthony Mickalo	ASP P1392			
Maintenance Manager	ASP T1496			
(*A) John Baker	Repairman 142G			
Avionics Manager	Avionics			
** May Puree	Repairman 132F			·
Inspector Avionics	Avionics			
* John Jones	Repairman 1692 X-ray			
Inspector Specialized	Ultrasonic			
Service	Magnetic Darticle			
Dervice	Eddy current			
Authority Delegation	n.			
(*)Authorized to sig	m. for lead mechanic	work only.		
(**) Authorized to 1 PAR Parts 121, 125,	neturn air carrier ai 127, and 135 within	rcraft to serv the scope of ti	rice, in acco ne repair st	rdance with ation.
(*A) Authorized to a PAR Parts 121, 125, of the repair statio	return air carrier air 127, and 135 re gardin on ratings.	craft to servi g avionics equ	ce, in accompression in	rdance with nin the sco
APPROVED: 9. MV.				

FIGURE 12. AUTHORITY AND ROSTER OF AUTHORIZED INSPECTION PERSONNEL (CONTINUED)

(NAME OF COMPANY) REPAIR STATION - INSPECTION PROCEDURES MANUAL

Section: II Page No. 3

Title: Authority and Roster of Authorized Inspection

Personnel
Issue Date: 7/1/78

AUTHORITY DELEGATION (CONTINUED)

For a complete list of duties, see Chief Inspector's duties.

The inspector will signify acceptance of work performed by stamping the appropriate box on the work order or inspection form along with the date the work is accepted.

Log book entries, inspection forms, and FAA forms must be signed using full name and in ink by the inspector completing the inspection.

A master list shall be maintained with each inspector's full name, initials and stamp in this section of the repair station manual (or in the repair station as applicable). A stamp issued to an inspector will be destroyed when an inspector no longer acts as a member of the inspection department, and that number will not be reissued.

All inspectors are authorized to return to service aircraft and/or component for which the repair station is rated after annual inspection, major alteration or major repairs have been completed.

APPROVED: J. M. Boso General Manager

FIGURE 13. SECTION III - PERSONNEL & TRAINING COVER PAGE

NOTE:

This information is not required by FAR to be included in this manual, except the procedures for training inspection personnel. Companies who desire, may include this information in its manual for all personnel.

(NAME OF COMPANY) REPAIR STATION - INSPECTION PROCEDURES MANUAL SECTION III PERSONNEL & TRAINING

FIGURE 14. TRAINING INFORMATION

Reference: FAR Section 145.39(e) and Section 145.45. This page should identify what methods are to be used. The records should reflect the methods, type, length of training, where and when it was received. The records should be kept current.

(NAME OF COMPANY) REPAIR STATION - INSPECTION PROCEDURES MANUAL

Section: III
Page No. 1
Title: Training
Issue Date: 7/1/78

Training of repair station inspectors and other personnel will be accomplished by classman instruction plus factory and on the job training as necessary.

Classroom training will be accomplished by the maintenance manager, chief inspector or factory field service representatives.

Factory training will be scheduled as necessary for personnel to became familiar with new aircraft and aviation products or product improvements.

Currentrecordswill bemaintained for each employee by the general manager on Form 123, Record of Employee's Training. The record will indicate the type of training (detailed), method, duration, date of completion, location and include the name of the instructor that conducted the classroom and on the job training. Copies of the certificates issued for factory training will be kept in enployee's file.

APPROVED: J. M. Boso General Manager

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FI GURE 15. EMPLOYMENT SUMMARY

Reference: FAR Section 145.43(b) (1) through (5). This information is not required by regulation to be kept in this manual but is required to be available in the repair station, it is suggested 'that this information not be made part of this manual so that a revision to the list would not require a revision to the manual. A company who desires, may include it in it manual. In either case, a separate summary is required for each person that is-listed in Section II, Pages 1 & 2. It should contain the information as shown on the sample for each person to show compliance with the regulations.

It should be in the format of the referenced regulation. NOTE 1:

It is **recommended** that space be provided at the end of each NOTE 2: summary for the individual's signature.

This summary is required to be maintained in accordance with NOTE 3: Section 145.43(c) through (e).

(NAME OF COMPANY) REPAIR STATION - INSPECTION PROCEDURES MANUAL

Section: III Page No: 2

Title: Employment Summary

Issue Date: 7/1/78

Name: Harry Jones Title: Chief Inspector

Scope of present employment: Has complete repair station inspection responsibility. Type certificate(s) rating(s) & number(s) A&P 15602, Repairman Q36891 Instruments & Propellers. Total years experience:

Work Record

From	То	Employerand address	Position
1. 1-48	2 - 58	A.B.C. Aviation - Newton, New York A.B.C. Aviation - Newton, New York	A&P Mechanic
2. 2-58	5-65		Lead Mechanic
3. 5-65	7-69	A.B.C. Aviation - Newton, New York Elmo Aviation - Frespo, California	shop Foreman
4. 7- 69	Present		Chief Inspector

signed:

APPROVED: J.O. M B.

FIGURE 16. SECTION IV - DUTIES AND RESPONSIBILITIES COVER PAGE

NOTE: This section should contain the duties and responsibilities of key positions by title (use separate page(s), one page for each position shown on the organizational chart in Section II). No names should appear in this section, only titles. Title should be the same as on the organizational charts and eleswhere in the manaul. The information contained on the following pages are examples. Place the applicable titles, duties, and responsibilities in the appropriate positions as they exist at your facility. Only the information relating to the continuity of inspection responsibility is required to be included in the manual.

(NAME OF COMPANY)
REPAIR STATION - INSPECTION PROCEDURE MANUAL

SECTION IV
DUTIES AND RESPONSIBILITIES

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FIGURE 17. DUTIES AND RESPONSIBILITIES - GENERAL MANAGER Reference: FAR Sections 143.35, 145.37, 145.39, 145.41. 145.43, 145.47, 145.49, and 145.55.

(NAME OF COMPANY) REPAIR STATION - INSPECTION PROCEDURES MANUAL

Section: IV Page No: 1

Title: Duties and Responsibilities

Issue Date: 7/1/78

GENERAL MANAGER

The general manager is responsible **to** the vice president of technical services for the **complete** overall operations of de repair station, including the adequate housing **and** facilities and the **continued** maintenance thereof. In addition the general **manager** is also responsible:

For providing adequate training, **equipment**, **materials** and canpetent personnel **pertinent to** the operations of the repair station in order that it **may comply** with all applicable Federal Aviation Regulations (FAR) and manufacturer's **recommendations**.

To ascertain that adequate fire fighting equipment is available at the repair station.

To establish standards ${f to}$ ascertain that adequate safety precautions are observed.

To establish procedures to determine the **reed** for original and recurrent training of personnel **consistent** with the **work to** be **performed**. Establish liaison with air **carriers** respecting applicable FAR requirements, **when work** for air carriers is to be performed.

In the absence of a **maintenance** manager or chief **inspector** the general **manager** assumes the responsibilities and delegates authority to qualified personnel as dictated by FAR **Part** 145 and FAR Part 43, to release aircraft **for** service after repair or inspections.

The general manager may delegate all duties assigned **to** any qualified assistant as necessary **however**, such delegation does not relieve the general **manager** of the overall responsibilities.

APPROVED: O. M. Boso General Manager FIGURE 18. DUTIES AND RESPONSIBILITIES - CHIEF INSPECTOR
Reference: FAR Sections 145.35,143.43, 143.47, 145.33, 145.57, and 145.59

(NAME OF COMPANY) REPAIR STATION - INSPECTION PROCEDURE MANUAL

Section: IV Page No: 2

Title: Duties and Responsibilities

Issue **Date: 7/1/78**

CHIEF INSPECTOR

The chief inspector is responsible to the general manager for the overall operation of the inspection department and, as such, will have the final authority in the releasing to service of airframes, engines, propellers, appliances and the component parts thereof. In addition, the inspector is responsible for directing, planning and laying out the details of inspection standards, methods and procedures used by the repair station in complying with all applicable Federal Aviation Regulations, manufacturer's specifications and recommendations.

It is the chief inspector's duty to:

- 1. Assist, supervise and direct all personnel assigned to the inspection $\ensuremath{\mbox{department.}}$
- 2. Ascertain that all inspections are properly performed on all cmpleted work and that the proper inspection records, reports and forms used by the repair station are properly executed prior to releasing the product for return to Service.
- 3. Maintain and keep current a file of pertinent Federal Aviation Regulations, specifications, type certification data sheets, and airworthinessdirectives.
- 4. Determine that all technical data on all articles overhauled or repaired by the repair station are secured and kept current with latest revisions by the respective department inspectors. This data will include repair station's process specification for limited rating specialized services, manufacturer's overhaul manuals, service bulletins, part specifications, related Federal Aviation Administration approved data and other technical data used by the repair station. In addition, assure that all military technical orders used in the overhaul and repair of components have been evaluated and approved by the FM.

APPROVED: Q.m. General Manager

FIGURE 18. DUTIES AND RESPONSIBILITIES - CHIEF INSPECTOR (CONTINUED)

(NAME OF COMPANY) REPAIR STATION - INSPECTION PROCEDURES MANUAL

Section: IV Page No: 3

Title: Duties and Responsibilities

Issue Date: 7/1/78

CHIEF INSPECTOR (CONTINUED)

- 5. Assure that periodic checks **are made on** all inspection **tools** and the calibration of precision test **equipment** used by the repair station and mechanics&o have **their own** precision **equipment. Futher** assure that a current record of **those** inspections **and** testis maintained.
- 6. Determine that no defective, **unserviceable**, or **unairworthy** parts are installed in any **component** or articles released by the repair station.
- 7. Submit reports of defects of $\mathbf{unairworthy}$ condition in accordance with FAR 145.63.
- 8. Assure the proper execution of FAA Form 337 when required, and/or a maintenance release.
- 9. Accomplish the final acceptance of all incoming material, including new parts, supplies and the airworthiness of articles on which work has been performed outside the repair station by contract.
- 10. **Conduct the** preliminary, hidden damage, in-progress, and final inspection of **all** articles processed by **the** repair station and record results as outlined in this **manual**.
- 11. Oversee the proper Gigging and identification of all parts and canponents as outlined in this manual
- 12. Provide **for continuity** of inspection responsibility, assuring campletion of required inspection **when** personnel shift or **assignment** changes **occur.**

APPROVED: 9. m. Boco General Manager

FIGURE 18. DUTIES AND RESPONSIBILITIES - CHIEF INSPECTOR (CONTINUED)

(NAME OF COMPANY) REPAIR STATION - INSPECTION PROCEDURES MANUAL

section: Iv Page No: 4

Title: Duties and Responsibilities

Issue Date: 7/1/78

CHIEF INSPECTOR (CONTINUED)

13. See that rejected and unserviceable parts arehandled in such a way as to prevent their reuse as serviceable parts.

14.Ascertain that all inspections are properly performed on all completed work before it is approved for return to service, and that the proper inspection and maintenance records, reports, and forms required for such release are properly executed.

15. Maintain files of completed work orders and inspection forms in such a marner that the file pertaining to a specific item repaired can be readily located for review.

16. Inspect all radio work that requires the qualification of an ASP mechanic, such as airframe structures, airframe electrical wiring, and weightandbalance.

Note: The chief inspector may delegate all duties assigned to my qualified assistant as **necessary, however,** such delegation does **not** relieve the chief inspector of **the** overall responsibilities.

APPROVED: 9. 7m. Bosonia

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FIGURE 19. DUTIES AND RESPONSIBILITIES - MAINTENANCE MANAGER Reference: FAR Sections 145.35, 145.37, 145.39, 145.45, 145.47, 145.55, 145.57, 145.59, and 145.61.

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MAINTENANCE MANAGER

The maintenance manager is responsible to the general manager for the operation of the repair station.

In addition, the maintenance manager is responsible for:

- 1. Training and assisting subordinates in the proper work procedures and practices to be followed.
- 2. Maintaining all hangar and shop equipment and tools in a serviceable working condition, assuring that periodic checks and calibrations are made on special tools and test equipment, and that current records are maintained of those tests and calibrations.
- 3. Ascertaining that all necessary maintenance entries on maintenance forms and work orders used by the repair station are properly executed by the responsible mechanics.
- 4. Maintaining the **premises** of the repair station in a clear: and orderly manner.
- 5. Initiating purchase requisitions for stock as required.
- 6. Assuring that the personnel in the $\mbox{\it maintenance}$ department do quality $\mbox{\it work.}$
- 7. Conducting periodic drills for the purpose of indoctrinating personnel in the proper use and location of fireffighting equipment, and checking the equipment periodically for serviceability and adequacy.

APPROVED: 9. m. Good General Marager

DUTIES AND RESPONSIBILITIES - MAINTENANCE MANAGER (CONTINUED) FIGURE 19.

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MAINTENANCE MANAGER (CONTINUED)

- **Indoctrinating** the personnel in observing the safety precautions relevant to the functions for which they may be utilized.
- 9. Making available to the departments under the maintenance manager's control the required technical data on all aircraft, engines, and appliance, for the maintenance accomplished and keeping the data current with latest revision. The data will include manufacturers' maintenance and overhaul manuals, service bulletins, parts specifications, related Federal Aviation ministration approved data, and any other technical data used by the repair station.
- 10. Assuring the proper handling of all Parts while in repair process and when work is completed.
- 11. Maintaing the preservation of all units or parts during the work process, installation and storage.

Note: The maintenance manager my delegate all duties to any qualified assistant as necessary; however, such delegation does **not** relieve the maintenance manager of the overall responsibilities.

APPROVED: 9. M. Bos General Manager

FIGURE 20. DUTIES AND RESPONSIBILITIES - AVIONICS MANAGER
Reference: FAR Sections 145.35, 145.37, 145.39, 145.45, 145.47, 145.57, 145.59 and 145.61.

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AVIONICS MANAGEP

The avionics manager is responsible to the general manager for the overall operation of the avionics department.

In addition, the avionics manager is responsible for:

- 1. **The** planning, direction and **coordination** of activities within the department, and the planning of its activities in conjunction with other departments, as required.
- 2. **Assuring** that the **repair** and overhaul of **all** articles and **components** within the avionics manager jurisdiction is **accomplished** within **the** authority of the repair station **and** that the **work** is inspected by the inspection department.
- 3. Training and assisting subordinates in the **proper work** procedures **and** practices to be followed.
- 4. Making available to the avionics department the required technical data on all articles overhauled or repaired by the avionics department and keeping the data current with latest revisions. The data will include manufacturers' overhaul manuals, service bulletins, parts specifications, related Federal Aviation Administration approved data and any other technical data used.
- 5. The maintenance of all avionics **department equipment** and tools in a serviceable working **condition**, assuring that periodic checks **and** calibration are made **on** test **equipment** and that current **records** are **maintained** of those tests and calibrations.
- 6. Ascertaining that all necessary maintenance entries on maintenance forms and **work** orders used by the repair station are properly executed by the responsible technicians.
- 7. The quality of work performed by the personnel in the department.

APPROVED: 9. m. Boson General Manager

FIGURE 20. DUTIES AND RESPONSIBILITIES - AVIONICS MANAGER (CONTINUED)

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AVIONICS MANAGER (CONTINUED)

- 8. The proper handling of all parts while in repair process through the avionics shop and when work is campleted.
- 9. The preservation of all units or parts during process through thf avionics shop and when work is campleted.
- 10. To insure that the maintenance of the avionics department premises are kept in a clear, and orderly manner.
- 11. Initiating purchase orders for stock as required.
- 12. The maintenance of all avionics department records.

Note: The avionics manager my delegate all duties to any qualified assistant as necessary, however, such delegation does: not relieve the avionics manager of the overall responsibilities.

APPROVED: 9.m. 3---General Manager

FIGURE 21. DUTIES AND RESPONSIBILITIES - STOCKROOM MANAGER

Reference: FAR Sectionx 145.35 and 145.37

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STOCI KROOM MANAGER

The :stockroom manager is responsible to the general manager for the operation of the stockroom.

In addition, the stockroom manager is responsible:

For identifying, controlling, segregating, and maintaining all stock and tools: to a serviceable or unserviceable category as designated by the chief inspector.

For the preservation of all articles or parts, tile carried in inventory, including parts that are subject to deterioration and shelf-life specifications.

For controlling the inventory.

For distributing to all pertinent departments any miscellaneous technical in:formation.etc., which is received by the stockroom.

For= ascertaining that a sufficient supply of fire fighting and safety equipment is provided for use at fire stations in hangars, Shops, ramps, and vehicles and for their replacement after use.

The stockroom manager my delegate to any qualified assistant as necessary, how ever, such delegation does not relieve the stockroom manager of the overall responsibilities.

APPF (OVED: 9. m. Boco General Marager 2/13/81 AC 145-3 Appendix 1

FIGURE 22. SECTION V - INSPECTION SYSTEM COVER PAGE.

NOTE: This section contains some areas that may be considered in excess of minimum FAR requirements. In order to produce satisfactory quality control those additional procedures were required.

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FIGURE 23. INSPECTION SYSTEM AND INSPECTION PERSONNEL. Reference: FAR Sections 145.45, 145.45(a), (b), (1) (2), (3) and 145.59(b). All inspectors should be certificated i/accordance with FAR

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INSPECTION SYSTEM

GENERAL

The chief inspector is responsible to the general manager for full compliance with all procedures outlined in this system as appropriate to any item being inspected; repaired, overhauled or altered by the repair station. The airworthiness of those items and compliance with record requirements of the operators of those items and of the repair station, depend; upon conformity to the procedures of this system.

INSPECTION PERSONNEL,

Inspection personnel are required to be thoroughly familiar with all inspection methods, techniques and equipment used in their area of responsibility to determine the quality of airworthiness of an article undergoing maintenance, repair or alterations. All personnel must also maintain proficiency in the use of the various types of inspection aids to be used for inspection of the particular items undergoing inspection. Available to all inspection personnel are current specifications involving inspection tolerances, limits, and procedures as set forth by manufacturer of the product undergoing inspection and other forms of inspection information such as FM airworthiness directives, manufacturers bulletirs, etc. A file of maintenance manuals, engineering letters, service letters, FAA regulations, etc., are maintained in the inspection office.

Inspection personnel assigned to repair station operations are required to familiarize themselves with FM regulations applicable to such operations with particular emphasis on the following:

FAR Part21 - Certification Procedures For Products And Parts

FAR Part23 - Airworthiness Standards: Normal, Utility And Acrobatic Category Airplanes

FAR Part25 - Airworthiness Standards: Transport Category Airplanes

FAR Part39 - Airworthiness Directives

APPROVED: <u>9. m</u>. Bre General Manager

FIGURE 23. INSPECTION AND INSPECTION PERSONNEL (CONTINUED)

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INSPECTION PERSONNEL (CONTINUED)

FAR Part 43 - Maintenance, Preventive Maintenance, **Rebuilding and** Alteration

FAR Part 45 - Identification And Registration Marking

FAR Part 65 - Certification: Airmen Other Than Flight Crewmembers

FAR Part 91 - General Operating And Flight Rules

FAR **Part** 145 - Repair Stations

FAR Part 121 - Certification and Operations: Domestic, Flag, and Supplemental Air Carriers and Commercial Operators of Large Aircraft

FAR Part 125 Certification and Operation Rules for Certain Large Airplanes

FARPart 135 -Air Taxi Operators And Commercial Operators

INSPECTORS, MECHANICS AND SUPERVISORS

All supervisors, inspectors and mechanics are required to be thoroughly familiar with the requirements of this manual, FAA regulations, airworthiness directives and advisory circulars, manufacturers service letters and bulletins and engineering Orders. The basic inspection system requires mechanics to sign their last name for work performed by them prior to submitting the item to inspectors for final acceptance. Inspectors will indicate their acceptance of work performed with the application of the inspector's acceptance stamp next to the item on the work forms. See Section VI of this manual for sample forms and instructions for their use.

APPROVED: 9. M. Boso General Manager FIGURE 24. INSPECTION CONTINUITY

Reference: For Sections 145.45(f) and 145.61. This section should show by title, who performs the inspection, the forms to be used, and disposition of the records. The inspection continuity should encompass incoming materials, preliminary hidden damage and final inspection where applicable. It should include items as they progress through various stages of repair, overhaul or modification, including other inspections, test and calibrations (Rockwell Hardness Test, Magnflux, Ultrasonic X-ray, etc.), adjusting or calibrating VOR, DME or ILS equipment. It should establish a system for passing along the continuity of inspection and other maintenance from one shift or person to another. It should reference manufacturer's inspection standards for the maintenance of the particular items.

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CONTINUITY OF INSPECTION RESPONSIBILITY

Through a "Line of Succession" list maintained by the chief inspector, his duties are assured of performance as "Acting Chief Inspector."

A status book will be provided in thehangar and each shop in which a status report will be left by each of the inspectors leaving the job before completion of a project, for information to the succeeding inspector. Its purpose is to assure a continuing inspectian responsibility for in-progress work inspections.

All forms upon which work performed is listed have been designed to show the name of the mechanic, or repairman who performs the work (or supervises it) and the name of the inspector inspecting that work.

A project involving work other than inspection only, may not be approved for return to service unless it has been cleared by the chief inspector as satisfying the requirements of FAR 145.61, and 145.59(a).

Samples of work forms, inspection forms, and instructions for completing them, are contained in Section VI of this manual.

APPROVED: J. W. Row General Manager

INCOMINGMATERIALS FIGURE 25.

FAR Section 145.45(c). This section should explain how Reference: compliance is shown, how the inspections are recorded, classification of incoming materials, including checks for damage, preservation and shelf-life, identification of parts by part number, and the person responsible to perform the inspection (by title). In addition, it should describe the action to be taken when materials received do not meet specifications.

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PARTS RECEIVING POLICY

The chief inspector of the repair station (or designee) is responsible to see that all incoming materials, AN or MS and other hardware, parts, component, equipment and other products procured for use by the repair station are subject to receiving inspection to assure conformance to part number, purchase order and/or other applicable specifications. A record of such inspections will be recorded on repair station Fbrm No. 214, Recieving Inspection. Any products that fail to meet applicable specifications will be red tagged as unserviceable, listing the discrepancy and be returned to the **stockroom** manager for return **to** vendor. **To** preclude those parts **from** being used, the stockroom manager will place such items in the locked holding area until they are repacked for shipping back to the vendor.

GENERAL TEST REQUIREMENTS:

- 1. New components manufactured under a type or production certificate, or in accordance with a Technical Standard Order (or similar FAA approved technical data), or components which have been rebuilt by the manufacturer to production specifications, require a visual receiving inspection.
- 2. Any repaired or overhauled components received from an FAA certificated repair station do not normally require more than a visual receiving inspection before being returned to service. Repaired or overhauled cumponents that are received from other than an FAA certified repair station, in addition to the normal receiving inspection, will be functionally checked before being returned to service.
- 3. All components requiring a functional check are routed to the proper repair station shop for the accomplishment of this check.

NOTE: Functional checks are performed in accordance with instructions contained in the appropriate manufacturer's publications. However, if such specific instructions are not available, functional check requirements will be determined by the chief inspector, and issued on a form to provide a means of recording compliance therewith.

APPROVED:

O. M. Bos GENERAL MANAGER

FIGURE 25. INCOMING MATERIALS (CONTINUED)

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PARTS RECEIVING POLICY (CONTINUED)

NOTE: Functional checks are performed in accordance with instructions contained in the appropriate manufacturer's publications.

However, if such specific instructions are not available, functional check requirements will be determined by the chief inspector, and issued on a form to provide a means of recording compliance therewith. If suitable test facilities are not available in repair station, components may be functionally checked in the aircraft. In any case, all functional checks must be monitored and recorded by the chief inspector or designee.

- 4. The Supervisor Quality Control may request a functional check of any component overhauled or repaired by any agency, when of the opinion that such a check is required in order to return the canponent to service.
- **5. All** adhesives, sealers, primers, finishing **and** other materials having limited shelf-life are identified **by** material control labels **showing** the **expiration** date of the shelf-life as established by applicable **specifications. Inspectors and mechanics will dispose** of any materials **found** in tie shop **or** store **rooms** without such **identification** or with expired shelf-life.
- 6. The detailed functions of material inspection are covered by the manufacturer's quality assurance directive and inspection bulletins which will be used to implement the operation of tie repair station with respect to the control and identification of materials, parts and equipment received for direct use in the repair station. All parts new or overhauled purchased from vendors will be checked for proper approval documentation prior to release for installation by the repair station.

APPROVED: J. M. Asso General Manager FIGURE 26. WORK ORDER

Reference: FAR Section 145.61. The work order should have an identification number, show the name of the repair station, address and the FM assigned repair station number. It should show the customers name and address, complete identification of the items worked on, detailed instructions for work to be accomplished and space or reference instructions for work to be accomplished. For the work accomplished sign off space for mechanics and inspector. And instructions for sign off of work as acceptable to the company.

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WORK ORDER

Upon receipt of a work request for maintenance or alteration on an airframe, engine, accessory, propeller, instrument, radio or a product requiring a specialized service covered by the repair station certificate, the maintenance department will issue a (name of company) Repair Station Work Order Form 1234 to authorize that work to be accomplished. The form is prenumbered and that number will be the basic reference for the product's maintenance record. The work order will specify the work to be accomplished. The work order will be supplemented as necessary with detailed inspection instructions along with applicable forms, to assure proper inspection and repair of the unit involved. The number of additional forms used will be identified on the work order. The original of the printed and numbered work order form will be retained in the maintenance manager's office.

A **logbook** will be **maintained** in the maintenance **manager's** office for recording each **work** order in **numerical** order, identifying the **customer**, the **product** for **which** it **was** issued along with the **manufacturer** serial number, special instructions **and** the **work accomplished**.

It will be the responsibility of the respective shop manager **and chief** inspector **to** assure that proper supplemental instructions are furnished **to** assure proper progressive servicing, inspection **and** testing of the **product** involved.

Mechanics will enter **work accomplished and** use last names to sign off that **work on** the form. Inspectors will use their inspection stamp **to** sign off inspections. Alist of inspectors **and** stamp **numbers** are **contained** in this manual **under** Section II, **Page** 2.

See copy of work order and supplemental forms in Section VI of this manual.

APPROVED: 9. M. Social General Manager

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FIGURE 27. RECORD OF WORK

Reference: FAR Section 145.61. A copy of the work order with all attachments should be on file as a permanent record of all work accomplished. The record should reflect the signature of each mechanic and inspector that performed maintenance on each unit. it should reflect exactly what work was accomplished. It should show all of the parts used. The records should be maintained for a period of not less than two years.

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RECORD OF WORK

A detailed record shall be kept of all work performed by the repair station. A copy of each Work Order Form 1234 with all attached supplementary form(s) will be maintained in the repair station records section. A separate file area is provided for all paper work associated with the repair station's workactivities. Each work record is checked by an inspector for work accamplished, parts used, signature of mechanic and inspectors who performed maintenance. Records are maintained in active file for two (2) years then transferred to dead storage for 5 additional years.

APPROVED: 9. M. Book

FIGURE 28. PRELIMINARY INSPECTION.

Reference: FAR Sections 145.2 and 145.45(d. This information should indicate who is to perform the inspection, the method of inspection and any special testing requirements. Instructions should include the type of form to be used, how defects noted are recorded and the requirement to make them part of the work order.

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PRELIMINARY INSPECTION

The Chief Inspector of the repair station is responsible for the performance of appropriate inspections including functional and nondestructive tests to assure that all units delivered to the repair station for maintenance, alteration or repair under the privileges of the repair station certificate are subjected to a preliminary inspection to determine the state of preservation and any defects on the items involved. This inspection will be recorded on the Preliminary Inspection Form 567 with any discrepancies noted and the form must be attached to the work order identified with the unit involved. It will remain with the applicable inspection records until the unit is released for service. Appropriate supplemental forms will be used to record the results of functional and nondestructive tests. Those forms will show the work order number and will be routed attached to the work order.

Before any work is begun, the Chief Inspector will, in the case of work to be performed for an air carrier under the continuous airworthiness requirements of FAR Parts 121, 125, 127, or 135, make sure that all necessary current information and specifications are included or referred to in the work instructions that are to accompany the article through the repair stat ion, and that the work is done in accordance with the air carrier's manual.

APPROVED: 9. W. Bossa General Manager FIGURE 29. HIDDEN DAMAGE INSPECTION

Reference: FAR Section 145.45(e). This section should describe who is to perform the inspection (by title), the depth (should include areas adjacent to obviously damaged members or components), how the inspection will be recorded, the recording and handling of any defects noted and the requirement to make the inspection a part of the work order.

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INSPECTION FOR HIDDEN DAMAGE

The preliminary inspection is not limited to the area of obvious damage or deterioration but includes a thorough and searching inspection for hidden damage in areas adjacent to the damaged area and/or in the case of deterioration, a thorough review of all similar materials or equipment in a given system or structural area. The scope of this inspection will be governed by the type of unit involved with special consideration accorded previous operating history, Malfunction or Defect Reports, service bulletins and AD notes applicable to the unit involved. The inspector is responsible for listing all discrepancies noted during inspection on the work order prior to release for return to service. See Section VI of this manual for proper forms and instructions for using them.

APPROVED J. M. Rose General Manager

FIGURE 30. RECORD OF INSPECTION

Reference: FAR Sections 145.59(a), 145.59(d) through (f) and 145.61. This section should explain how the results of required inspections are recorded and made part of the applicable work order.

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PROGRESSIVE INSPECTION

Authorized inspectors will be assigned to make inspections at various stages of teardown, overhaul, and repair of all units or components received by the repair station for service. Progressive inspectionis are accomplished with a frequency determined by applicable manual recommendations and/or repair station originated work forms.

MAJOR REPAIR AND ALTERATION AIRCRAFT AND COMPONENTS

Following the preliminary inspection, additional records my be prepared by the inspection department to provide a comprehensive historical record of the work performed. These records will contain work orders, service bulletins, AD notes, service letters, type of inspection, detailed figures related to functional tests and special nondestructive tests to be accamplished. The approved engineering or other approved technical data authorizing the repair or alteration will be clearly indicated. Where special drawings are made to cover specific repair conditions, a copy of the drawing will be included in the aircraft records.

Units removed from the aircraft will be tagged with the appropriate inspection identification tag listing the aircraft serial number, unit serial number and reason for removal.

No item removed and tagged as above described&ill be reinstalled unless the unit is cleared as "serviceable" by inspection.

REPAIR, ALTERATION AND OVERHAUL ACCESSORIES AND APPLIANCES

Self-contained accessory and appliance units such as actuators, pumps, valves, generators, etc., which, after preliminary inspection, have been established as eligible for overhaul or repair, will be identified with a green repairable part tag with appropriate repair instructions entered on the face of the tag, as authorized by the work order. No such unit shall be approved for returned to Service without a maintenance release tag authorizing its return to service.

APPROVED: 9. W. Boro General Manager

FIGURE 30. RECORD OF INSPECTION (CONTINUED)

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INSPECTION PROCEDURES

The Chief Inspector is responsible for the **complete and** efficient performance of inspections assigned to the repair **station to** assure inspection acceptance in accordance with **manual** specifications or other approved **technical** data.

Shop supervisors are responsible for the accomplishment of all work in accordance with manual specifications or other approved technical data. The work done under the repair station's Limited Rating-Specialized Service Nondestructive Inspection by X-ray, magnetic particle, eddy current or ultrasonic must be accomplished in accordance with the (name of company) FAA approved process specification NDT-1 dated 7/1/78.

Alterations and repair will be subject **to** progressive inspection by the inspection**department. Discrepancies** generated during the process of **accomplishing** the **work** involved will be recorded **on** the appropriate **work forms.** Discrepancies so recorded **will** be corrected before the unit is **submitted for** final inspection. **Upon completion** of this progressive inspection, the area affected is **given** a **shakedown inspection and** after all **rework is accomplished and** accepted, **the** inspection **will** clear the **unit** for final **acceptance.**

Upon completion of a specific operation, the **mechanic** will sign off **the** records using his signature indicating that the **item** is **complete and** ready **for** inspection. The action accamplished **to** correct a specific discrepancy will be **roted under** each item **on** the **work** order.

The inspector will **then** inspect the item **to** assure **conformance to** specifications and established **workmanship** standards. **Functional checks** of any system affected by **the work** involved will be accemplished before **final** acceptance. **Inspection** acceptance **will** be indicated by the inspector's stamp.

APPROVED: 9. m. General Manager

FIGURE 30. RECORD OF INSPECTION (CONTINUED)

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MAINTENANCE INSPECTION-

One-hundred hour and progressive inspections, inspections of anateur built aircraft and aircraft on FAR Section 91.217 programs will be accamplished in accordance with the inspection cards or inspection schedule provided for each specific model aircraft. The inspection paperwork will be supplemented as necessary to cover items to be replaced for time, special inspection items, discrepancies and airworthiness directives. All 100-hour and arrual inspection paperwork will comply with FAR Part 43 Appendix D.

No aircraft will be returned **to** service following an inspection as outlined above until all discrepancies affecting airworthiness have been corrected.

Maintenance supervisors are responsible for screening completed work orders covering work performed in their assigned area to assure that all items on the work order have been cleared, that there are no open discrepancies and that all major work accomplished is tiered by approved data. Inspection will recheck to assure compliance with this section.

After work orders have beer: screened for completeness and accuracy they are routed to the maintenance manager's office. Such inspection and work records will be retained in active file for a period of not less than two years (as required by FAR Part 145) and then transferred to dead storage for 5 additional years.

CONTINUITY OF MAINTENANCE RESPONSIBILITY

Astatusbookwill be provided in the hangar and each shop in which a status report will be entered by each of the lead mechanics informing the next shift of the status of each job not completed. Its purpose is to assure a continuing maintenance responsibility for work in progress.

APPROVED: J. M. Bosse General Manager

FIGURE 31. HANDLING OF PARTS

Reference: FAR Sections 145.35, 145.35(a)(3), 145.35(d) 145.35(a)(4) and 145.35(e). This section should explain compliance with the rule. Processing of parts, identification, tag, segregation, protection from damage and/or contamination, parts finishing, preservation, stock control and shelf-life.

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HANDLING OF PARTS

All items or components undergoing maintenance, repairs and/or alterations in the repair station shall have the component parts segregated and in containers in order to assure that all parts of the same unit(s) are kept together. Suitable trays, racks, stands and protective coverings (as required) are to be provided in shop areas to ensure maximum protection of all parts. Rejected parts will be identified by the use of a red reject tag and final disposition will be the responsibility of the Supervisor — Quality Control.

TAGGING AND IDENTIFICATION OF PARTS

The following is our four (4) tag system:

- White tag Used for identification of unit and customer only. To be completed by shop supervisor or a designated employee.
- <u>Green tag</u> Will be attached to **units or** parts requiring repairs or test and will include **work to** be performed. **To** be executed **and** signed by inspector only.
- Yellow tag To be attached to completed units which have received final inspection and are approved for return to service. The maintenance release is printed or stamped on the reverse side of this tag. (See Maintenance Release Statement , Section V., Page 21). This release will be signed by a designated person only.
- Red tag Will be attached to rejected parts, pending final disposition. If rejected parts are in large quantities, they can be placed in a special container marked "rejected parts." This tag to be completed by an inspector.

APPROVED: 9.m. Boss General Manager

FIGURE 31. HANDLING OF PARTS (CONTINUED)

(NAME OF COMPANY)

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HANDLING OF PARTS (COONTINUED)

All tags contain the following information:

Manufacturer - model - part number - serial rumber - name of part - owner.

The yellow tag will remain attached to the parts returned to the customer.

The red, white and green tags will be made apart of the work order file. If the rejected part is returned to the customer, the red tag will remain attached and a record will be made on the work order showing the part was returned to the customer.

PART FINISHING

Painting and spraying is accomplished in an area segregated from the assembly areas.

PRESERVATION OF PARTS

Components are preserved in accordance with manufacturer's recommendations or other acceptable industry standards. To afford protection against humidity, extreme temperatures, dust, rough handling or other damage, tie component will be preserved by wrapping in suitable containers, plastic bags, and/or rigid boxes containing suitableshock absorption material.

Storage of "Repair Station" preserved components will be accomplished by storing in a separate "Repair Station" location maintained by the "Stores"department. The location should provide maximum protection from physical damage. (Expand as necessary the preservation and storage requirements to suit the products worked on under the repair station ratings.)

SHELF LIFE

For those items having a specific shelf life, RepairStation Form 2468 is completed by the receiving inspector during the first ten (10) calendar days of each month.

Components or parts that have exceeded allowable shelf life limits will be red tagged (Condemned) and will be forwarded to the Supervisor, Quality Control for final disposition.

APPROVED: **9. M. Breo** General Manager

FIGURE 31. HANDLING OF PARTS (CONTINUED)

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INCOMING MATERIAL

All incoming material shall be inspected for quantity, quality, conformity **to** dimensions or specifications **and** state of **preservation**. At this time the **cure** date of material having shelf life shall be noted, and the older stock shall be used first provided it is not beyond manufacturer's specifications.

HARDWARE AND EQUIPMENT STORAGE

The **Stockroom** Manager is responsible to the General Manager for the operation of the **stockroom and** is responsible for **controling**, segregating **and** maintaining **all** stock and tools as **to** a serviceable or unserviceable category approved by the **Chief** Inspector.

In addition the Stockroan manager is required to:

Properly store, segregate and protect materials, parts and supplies.

Provide suitable storage facilities for **storing** standard parts, spare parts and assure that raw materials are separated fran shop **and** working space.

Provide for the **preservation** of all articles or parts, while in inventory, that are subject to deterioration **and** shelf-life specifications.

Only acceptable parts **and** supplies will be **issued** for any job. Acceptable **industry** practices shall be followed for the proper protection and storage of materials. (The standards for use **by** the repair station should be detailed here.)

APPROVED: 9.7w. Aves
General Manager

FIGURE 32. RECORD OF TEST AND/OR CALIBRATION. This section should include in-house tests applicable to the repair station ratings and those contracted to outside agencies. It should include a requirement for the signature of the mechanic and/or inspector as appropriate. The record should identify the article by serial number or company assigned number.

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RECORD OF SPECIALIZED INSPECTION. TEST AND/OR CALIBRATION

Specific notations, attesting accomplishment, will be made on either Form 468 and/or appropriate printed work forms for recording specialized inspectian, testing and/or calibration of a component or aircraft. (See Section VI of this manual.)

RECORD OF INSPECTIONS

Where a record of the inspection by dimensions, tests or calibration is required by **the manufacturer's** technical data such **record** shall be **made** on an appropriate form properly identified **with** the **Work** Order; it **must** also be dated and signed by **the** mechanic **performing** the inspection, tests or calibration and/or the inspector as appropriate.

RECORD OF TESTS AND CALIBRATION OF PRECISION EQUIPMENT

A system is maintained on all precision test equipment that will properly identify each piece of equipment. A file system is maintained to properly identify the equipment and record the date and person testing or calibrating each individual piece of precision equipment. (Give details of system here, or state here it can be obtained.)

WORK BY OUTSIDE CONTRACTORS

When test and/or calibrations are performed by the following outside contractors they will be required **to** provide the records as outlined above. (List here the outside agencies and the **work** for **which** they are contracted to do for the repair station.)

APPROVED: 9. M. Boco. General Manager

FIGURE 33. RECORD OF PRECISION TEST EQUIPMENT CALIBRATION.

Reference: FAR Sections 145.47(b) and 145.57(b). Identify the person (by title) responsible for the calibration and the test records. The records should include the manufacturer, model and serial or company assigned number, date of check, the method used to calibrate and the frequency, the person or company who performs checks, and the results and/or corrections made, when the next inspection is due, and requirements to tag equipment as appropriate.

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CONTROL OF PRECISION TOOLS AND TEST EQUIPMENT

Precision tools, gauges, scales, pressure gauges, meters, ohmeters, voltometers, radio, electronic, X-ray, eddy current and ultrasonic test equipment used in the repair station operations are subject to periodic checks and calibration in accordance with appropriate repair station procedures. (List equipment here and outline procedures as appropriate.)

All repair station **personnel**, before using test equipment, are responsible to check that the testing unit has a current calibration label attached. Any piece of test **equipment found** in the repair station without a current calibration label attached shall be given to the **inspection** department for recalibration.

TEST EQUIPMENT CALIBRATION REQUIREMENTS

Test equipment shall be calibrated at periodic intervals established on the basis of stability, purpose and degree of usage. One year shall be the maximum calibration interval. (List calibration periods on equipmentlist.)

Each piece of test equipment will be labeled. The label will identify the unit by manufacturer, model and serial number. The attached label must indicate the last calibration date and next calibration due date.

During the first week of each month the chief inspector will review the test equipment calibration history card file and give cards for test equipment requiring calibration to the maintenance manager and each shop foreman as appropriate. It will be the responsibility of those persons to issue work orders to repair station shops or outside contractors as recessary for the calibration of the units and attachment of updated calibration labels. After calibration, the test unit will be checked for proper labeling and the equipment calibration history card will be updated and returned to the inspection department active file.

APPROVED: 9. W. Boco

FIGURE 33. RECORD OF PRECISION TEST EQUIPMENT CALIBRATION (CONTINUED)

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TEST EQUIPMENT CALIBRATION REQUIREMENTS (CONTINUED)

At no time will any person be permitted to perform work on aircraft or components using test equipment which is out of calibration. The cest equipment labels will be behanded by sapervisor satt nandom to assure that equipment in use is in calibration. If at my time a piece of test equipment inadvertently exceeds its calibratim due date, it will immediately be removed from service until a calibration check has been performed..

Standards used to calibrate test equipment must be traceable to U.S. Bureau of Standards or an approved foreign country's standards by certificate fran the testing facility. Frequency for calibration standards may vary for different units but must never exceed a 12-month interval.

APPROVED: 9. m. Boso General Manager

AC 145-3 Appendix 1

FIGURE 34. FINAL INSPECTION AND RELEASE TO SERVICE

Reference: FAR Sections 43.9 and 145.59(a). This should explain compliance with the rules, who performs the inspection (by title), how it is recorded, and require a check of maintenance work package for completion.

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FINAL INSPECTION AND RELEASE TO SERVICE

Prior to approval for return to service, irrespective of the method to be used to indicate such approval, the Chief Inspector will audit the records "package" as identified by the work order, to determine that all work has been inspected as required for compliance with this inspection system and FAR Section 145.59(a). He will indicate affirmative findings approving the form per Section VI of this manual.

When approval has been given to the above audit, either the Chief Inspector or the individual authorized in the official roster and individual summary of employment, will approve the article for return to service.

This approval will be accomplished as appropriate to the work done, the article involved, the records available with the article, and the instructions of the customer. Care will be exercised to comply with FAR Part 43 in every case.

Whenever the aircraft records (log) are available, record of work accomplished is expected to be made therein. This does not waive any FAR Part 145 records requirements. Neither will FAR Part 43 or FAR Part 91 be considered waived by FAR Part145 records requirements.

Articlessuch as appliances, accessories, andindividual parts or components will not have an individual record to which an entry may be added. However, the installation of these items on an aircraft constitutes an aircraft maintenance or alteration, and records must be made accordingly.

Routinely, major repair approvals will be handled in accordance with Section 43.9 and paragraph (b) of FAR Part 43, Appendix B. A maintenance release is completed as a part of the work order form at the time of approval for return to service. A separate maintenance release cardwill be completed and shipped on an article that is shipped to a customer. At the request of the customer (to be indicated on the work order when originated), FAA Form 337 will be completed instead of the maintenance release approval for return to service in accordance with the procedure in paragraph (a) of FAR Part 43, Appendix B.

In all cases where major alteration is involved, FAA Form 337 will be completed per FAR Part 43.9 and FAR Part 43, Appendix B.

APPROVED: <u>Q. M. S. Coneral Manager</u>

FIGURE 34. FINAL INSPECTION AND RELEASE TO SERVICE (CONTINUED)

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FINALINSPECTION AND RELEASE TO SERVICE (CONTINUED)

The authorized supervisor in whose area the repair or alteration is **accomplished** will be responsible for establishing that the repair or alteration was made in accordance with the **requirements** of FAR Part 43 and will sign the **conformity** statement (Item 6) on FAA Form 337.

Authorized personnel responsible for the approval for return to service of aircraft will indicate such approval by signing the approval for return to service (Item 7) on FAA Form 337. Appropriate entries will be made in the aircraft record pertinent to the repairs and alterations accomplished by the repair station. Specific reference will be made by calendar date to the applicable FAA Form 337. The original FAA Form 337 will be inserted in the aircraft record with a copy forwarded to the local FAA-district office and one copy retained with the copy of the aircraft work order.

It is the responsibility of the person authorizing return to service to assure that the aircraft <code>flight</code> manual is <code>properly</code> revised following any alteration or modification to the aircraft and that the weight and balance <code>record</code> has been <code>amended</code> as necessary.

Aircraft components, appliances, and other items, other than completed aircraft repaired or overhauled as authorized by the repair station specifications, will be returned to service through the use of a maintenance release preprinted on the serviceable parts tag described in this section of this manual. The authorized supervisor under whose jurisdiction the work is accomplished will be responsible for the release of units in the category.

No aircraft 'or unit may be released for return to service until the work order and other records have been reviewed for **completeness** and final acceptance cleared by inspection. Particular attention shall be accorded the status of applicable airworthiness directives.

APPROVED: O. M. Business General Manager

FIGURE 35. SAMPLE OF MAINTENANCE RELEASE

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MAINTENANCE RELEASE STATEMENT

A maintenance release statement stamp and/or preprinted tag, prepared in accordance with FAR Part 43, Appendix B, will be used to release to service major repairs which have been accomplished by this station in accordance with FAR Part 43. Other records required by FAR Part 43.9 will be executed, as required, regardless of whether an FAA Form 337 or maintenance release has been used to return the article to service. In any event, the station will indicate on their **copy** of the work order whether or not a maintenance release was used, including the signature of the authorized representative.

"Example"

MAINTENANCE RELEASE (title)

The (use only applicable rating or ratings) aircraft airframe, aircraft engine, propeller or appliance identified above was repaired and inspected in accordance with current maintenance rules of the Federal Aviation Regulations and is approved for return to service.

"Pertinent details of the repair are on file at this repair station under Work Order No Date
Signed
(Signature of authorized representative)
for
(Repair station name & certificate number)
(Address)

NOTE 1: Inspection **stamp/symbol** will <u>not</u> be used on the maintenance release.

APPROVED:

*

FIGURE 35A SAMPLE OF MAINTENANCE RELEASE FOR AIR CARRIER WORK Reference: FAR Section 43.13(c)(d), FAR Section 145.2, Subpart L of FAR Part 121, Subpart G of FAR Part 125, Subpart I of FAR Part 12'7, and Subpart J of FAR Part 135.

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MAINTENANCE RELEASE STATEMENT

A maintenance release statement **stamp** and/or preprinted tag, prepared in **accordance** with FAR Part 43, Appendix B, will be used to release to service **major** repairs which have been **accomplished** by this station in **accordance** with FAR Part 43. Other records required by FAR Part 43.9 will be executed, as required, regardless of whether an FAA **Form** 337 or maintenance release has been **used** to return the article to service. In any event, the station will indicate **on** their **copy** of the **work** order whether or not a maintenance release was used, including the signature of the authorized representative.

"Example"

MAINTENANCE RELEASE (title)

The (use only applicable rating or ratings) aircraft, airframe, aircraft engine, propeller or appliance identified above was repaired and inspected in accordance with current instructions contained in (name operator and manual or program), the maintenance rules of the Federal Aviation Regulations under which the operator is certificated and is approved for return to service as per those requirements.

"Pertinent details of the repair are on file at this repair station under Work Order No. Date
Signed
(Signature of authorized representative)
for
(Repair station name & certificate number)
(Address)
Inspection stamp/symbol will not be used on the maintenance

APPROVED: 9. M. Boss General Manager

release.

NOTE 1:

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FIGURE 36. MALFUNCTION OR DEFECT AND MECHANICAL RELIABILITY REPORT

Reference: FAR Section 145.63(a) and (b). This section should explain in detail how compliance with rules and reporting requirements are to be met, and prescribe the responsibility (by title) of person(s) who prepare and submit reports.

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MALFUNCTION OR DEFFCT REPORT

This repair station will report to the FAA within 72 hours after it discovers any serious defect in, or other recurring unairworthy condition of, an aircraft, powerplant, or propeller, or any component of any of them. The report will be made on an FAA Form 8010-4, Malfunction or Defect Report, describing the defect or malfunction completely without withholding any pertinent information. (See Forms Section VI for copy of form.)

In any case, **where** the filing of a report under the preceding paragraph might prejudice the repair station, it will be referred **to** the Mministrator for a determination as to **wether** it **must** be reported. If the defect or malfunction could result in an imminent hazard to flight, the repair station will use the most expeditious method it **can** to inform the Mministrator.

MECHANICAL RELIABILITY REPORTS

When work is being accamplished for an air carrier and a defect as described under the Malfunction or Defect Report is found, the air carrier will be notified in order that a Mechanical Reliability Report may be issued by the air carrier.

RESPONSIBILITY FOR SUBMITTING REPORTS

The General Manager and Chief Inspector are responsible for preparing **and submitting** a Malfunction or Defect **Report to** the **FAA General** Aviation District Office. (Show location of office.)

APPROVED: 9. m. B.c.
General Manager

FIGURE 37. SUBCONTRACTED MAINTENANCE PROCEDURES

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SUBCONTRACTED MAINTENANCE

Any work performed by another **agency** for this repair station will be inspected **by** the Chief Inspector **or** an inspector delegated **for** such inspection. **This** inspection will be to verify that the **work** was **performed** in an **airworthy** manner, that parts **and** materials used **were** of such a quality **to** be airworthy, **and** that the paperwork received with the material verifies the authenticity of the part **and work** performed. At no time shall the stockroanmnager release any parts **made by,** or parts having had **work** performed **on** them by a subcontractor until the Chief Inspector or an inspector delegated has approved the **materials** as being **airworthy**.

All subcontracted **work** shall be kept separate **from** regular stock until this inspection has been performed **and** the mterial accepted for use.

If for any reason subcontracted mterial is rejected as being unaimorthy, it will imediately be identified as **unairworthy** and the proper disposition made, such as scrap or return **to** vendor.

LIST OF SUBCONTRACTED MAINTENANCE

- 1. Metal plating or anodizing.
- Complex machine operations involving the use of planers, shapers, milling machines, etc.
- 3. Abrasive air blasting and chemical cleaning operations.
- 4. Heat treament.
- 5. Magnetic inspection.
- 6. Fabricate wood spars.
- 7. Overhaul and **repair** hydraulic-pneumatic shock absorber units.
- 8. Overhaul and repair hydraulic system components.
- 9. Fluorescent inspecton of alloy parts.
- 10. Recovering and refinishing of components and entire aircraft.

APPROVED: <u>9. M. Sono</u> General Manager

FIGURE 38. PERFORMANCE OF MAINTENANCE, PREVENTIVE MAINTENANCE, ALTERATIONS AND REQUIRED INSPECTION UNDER THE CONTINUOUS AIRWORTHINESS REQUIREMENTS OF FAR PARTS 121, 125, 127, AND 135

NOTE: This section should show how the rule is to be complied with, that the work is to be accomplished in accordance with the operator's manual and a current copy of the manual is available.

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PERFORMANCE OF MAINTENANCE, PREVENTIVE MAINTENANCE, ALTERATIONS AND REQUIRED INSPECTION UNDER THE CONTINUOUS AIRWORTHINESS REQUIREMENTS OF FAR PARTS 121, 125, 127, AND 135.

This repair station will perform this work in accordance with the operator's manual. The repair station will have a current copy of the applicable section of each operator's manual which contracts with the repair station for the performance of that operator's maintenance. The chief inspector will be responsible for keeping each operator's manual revised and determining that the operator's manual is current before a work order is issued.

REQUIRED INSPECTION ITEMS (RII)

Any maintenance operations which, if improperly performed, could be critical to the safe flight of an aircraft will be given a required inspection. A qualified inspector, familiar with all inspection methods, techniques, and equipment will be assigned to determine the quality of airworthiness of the article involved. When work is performed for an operator un er the continuous airworthiness requirements of FAR Parts 121, 125, 127, and 135, the RII items specifiedby the operator will be maintained as RII items.

APPROVED: J. m. Bres General Manager

2/13/81

- Reference: FAR Section 145,51(d). In accordance with FAR Section 145,51(d), a repair station may maintain or alter any article for which it is rated at a place other than the repair station providing certain preparations are made and certain conditions are met as required by FAR Section 145.51(d)(1) and (2). Performance standards are required to remain acceptable at such places of work. FAR Section 145.51(d)(3) requires the inspection procedures manual to contain the approved procedures governing the work to be performed at a place other than the repair station. This is a frequently overlooked manual requirement. In order for a procedure to be valid for approval it should:
- 1. Be described in terms understandable to those persons who are governed by it in the performance of the work.
- 2. Be monitored **regularly** so as to ensure it covers the nature of the **work** that may be needed outside the repair station. This is necessary as it is difficult to predict the nature of **work** to be done outside the station.
- Re tailored for the particular station, the nature of work and the **frequency** expected. The following are items **recommended** for consideration:
- a. Who will authorize the work, organize the project, direct it, and who will perform the work?
- b. What type of work tasks will be required (supply, repairs, inspections, communications)?
- c. Where Same of the work is to be done. It may be advantageous to perform support work on canponents or parts at the base repair station as a standard procedure.
- d **How** will the **work** projects be monitored and reviewed to assure procedures are adequate and that records identify the projects for accountability?
- e. occasional explanations within the system description of why certain requirements, **controls** or reports are necessary will help employees to understand and accept the system.
- 4 The privilege to perform work at a location other than the repair station is to be done on a temporary basis. If a permanent station is established at the location, it will be necessary for the repair station to make application for a satellite to the main repair station, or make an original application for a repair station at the location.

FIGURE 39. PERFORMANCE OF WORK AT A LOCATION OTHER THAN THE REPAIR STATION (CONTINUED)

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PERFORMANCE OF MAINTENANCE AT A LOCATION OTHER THAN THE REPAIR STATION

(Name of Company) will provide maintenance service for its customers on an emergency on-call basis at a place away from the repair station.

(Name of Company) can only provide this service for work for which the repair station is rated. Only the general manager or the chief inspector are authorized to initiate a work order for such work.

The maintenance manager will be responsible for assigning the personnel necessary to perform the **work** and appoint a person to be in charge of the work force. The chief inspector will assign the inspector(s) responsible to inspect the work **and** assure that all required forms and work are **completed** as necessary. The chief inspector will assign me inspector with the responsibility for returning the article to service.

The maintenance manager will ensure that the article to undergo maintenance and the work force will be in ah area safe for the work to be performed and thattheywillbepmtected from the elements. The maintenance manager will be responsible for providing all the necessary marpower, work forms, technical data, tools, and equipment necessary for the accomplishment of the maintenance. The maintenance manager will establish a system of communications between the field force and the repair station.

The stockroom manager will be responsible for assigning a stockperson who will provide parts and supply support between the repair station and the field force. All articles removed by the field force from a product undergoing maintenance at a location away from the repair station will be muted through the stockrom parts receiving department. The article(s) will be inspected in accordance with the repair station inspection procedures and either muted to the repair station shops or to contract repair agencies as appropriate.

All personnel assigned to **accomplish work** away **from** the repair station shall **accomplish** the specific function of **work** in the **same** manner as when performed at the repair station and in accordance with FAR Sections 145.57 through 145.61.

APPROVED: M. Secondary Manager

FIGURE 40. SECTION VI - FORMS SAMPLE COVER PAGE.

Reference: FAR Section 145.45(f). This section is required to contain samples of each of the forms used by the repair station in the performance of maintenance and the method of executing them. The instruction for executing a form may be contained on the form if it is found practical. However, if it is necessary to change any of the procedures for handling the form it would require a reprint of the form. Unless a form is judged stable, it may be more economical to provide separate instructions on a manual page. It would then be a simple task to revise the manual page to show the change.

- 1 When planning a form system, important functions to be considered are the **control** of **operational** procedures and **recordation** of all work performed on each article processed.
- 2. The number and **content** of the forms **would** be influenced by the size **of** the repair station, the **complexity** and variety of the articles for which the repair station is rated, and the needs of its **customers**.
- 3. Same factors to consider during the **development** of instructions for **completing** a form are:
- a. How the form is to be introduced, (at what point in the maintenance process) and when it is to be **completed.**
- b. The person or section responsible to start the form, who will contribute to its completion, and who will finish it.
- $\mbox{\ensuremath{\text{c.}}}$ How the form will be executed (what kind of information, in what form, etc.).
 - d. The purpose of the form, and how it fits into the system.
- e. How the form will travel and what its final destination in the records system will be.
- f A system to locate and check the progress of products **enroute** thru the r&air station.
- 4 **Detailed** inspection forms and checklists which may be used in the performance of annual or other **approved** inspection **programs, or** engine overhaul inspection sheets, need not be included in this manual. These forms should be referenced in the forms section by form number, revision date and title. The manual should contain instructions for use and a **copy** of the detailed forms should be available for inspection upon request of the FAA and other authorized persons.

FIGURE 40. SECTION VI - FORMS SAMPLE COVER PAGE (CONTINUED)

- 5 It is possible at times to develop forms that can be used for mulitiple operations or work. The form should have adequate space and appropriate instructions, including specific assignment of responsibility, to assure that it can be properly identified with-the operation for which it was used and for recordation of work performance.
- 6 Forms used to record an inspection should be executed by indicating the inspection was completed, or that inspection was not required. Pesults of the inspection should be entered on the form or, if applicable, indicate that no discrepancies were noted.

NOTE: No examples of forms are offered since forms must be developed in accordance with the need of each repair station.

